FIG. 1, native human IL-13 (SEQ ID NO. 1)

K Т Q N Q E L v И I L R E L I E P s  $\mathbf{T}$ Α V P G P C Α Α L E Y G V W s I N L Т Α M A P C N G s M L F P н G С s R M L C S Α I E K T Q N V s G I A. Q K KIEV L H V R D T F s S K V S A G Q REGRF N K K L F H L L L L

FIG. 2, native murine IL-13 (SEQ ID NO. 2)

LS N I I E E PLTL K E L G P V P R SVSL G F С v A G Α Α G S М v W S v D L N C T P L I Η G L С  ${f T}$ Q R L C N A I Y R s N I L D S Ŀ  $\mathbf{T}$ N E v Α H F I Т K Т K I V S L P D S P Т т N R ĸ A F R н G P F T K Q L S Y

FIG. 3, Alignment of several mammalian IL-13 sequences

FIG. 4, IL-13 sequences from non-human primates

| 1<br>1<br>1    | s p v | PR  | S T A | LКE   | ELI   | E E L V N I T<br>E E L V N I T                  |             |
|----------------|-------|-----|-------|-------|-------|---|-------------|
| 21<br>21<br>21 | QNQ   | KA  | PLC   | NGS   | SMV   | W S I N L T A W S I N L T A W S I N M T A       |             |
| 41<br>41<br>41 | G V Y | CA  | АЬЕ   | SL    | V N I | S G C S A I E<br>S G C S A I E<br>S G C S A I E |             |
| 61<br>61<br>61 | кто   | RM  | LNG   | F C I | РНК   | V S A G Q F S<br>V S A G Q F S<br>V S A G Q F S |             |
| 81<br>81<br>81 | SLR   | V R | DTK   | IEV   | V A Q | F V K D L L V<br>F V K D L L V<br>F V K D L L R |             |
| 101            | ньк   | KL  | F R E | G R E | FN.   | cynomolgus IL13<br>rhesus IL13<br>marmoset IL13 | SEQ ID NO.8 |

# FIG. 5, Immunogen 1 (SEQ ID NO. 10)

| G.                             | P                       | V                      | D                             | P                           | S                      | S               | Δ                      | T.                     | к                              | E                          | т.                   | Т                      | E               | E               | τ,               | А                    | N                | T               | т                 |
|--------------------------------|-------------------------|------------------------|-------------------------------|-----------------------------|------------------------|-----------------|------------------------|------------------------|--------------------------------|----------------------------|----------------------|------------------------|-----------------|-----------------|------------------|----------------------|------------------|-----------------|-------------------|
| _                              | -                       | •                      | -                             | •                           | _                      | _               | ••                     | _                      | ••                             | _                          |                      | _                      | _               | _               | _                |                      |                  | _               | -                 |
| CA                             | GAA                     | CCA                    | GAA                           | GGC"                        | TCC                    | GCT             | CTG                    | CAA                    | TGG                            | CAG                        | CAT                  | GGT                    | ATG             | GAG             | CAT              | CAA                  | CCT              | GAC             | AGCT              |
|                                |                         |                        | •                             |                             |                        |                 |                        |                        |                                |                            |                      |                        |                 |                 |                  |                      |                  |                 | +                 |
|                                |                         |                        |                               |                             |                        |                 |                        |                        |                                |                            |                      |                        |                 |                 |                  | _                    |                  | -               | TCGA              |
| Q                              | И                       | Q                      | K                             | A                           | P                      | L               | С                      | N                      | G                              | S                          | M                    | V                      | W               | S               | I                | N                    | L                | T               | A                 |
| ~                              | יים אייט                | Cm N                   | ama.                          | TCC                         | ארכי                   | COT             | CCA                    | CTC                    | حرب                            | ርኒክጥ                       | ת תיי                | COT                    | CTC             | אככ             | CTC              | ርክ ር                 | TCC              | ריאידי          | CGAG              |
|                                |                         |                        |                               |                             |                        | -               | -                      |                        |                                |                            |                      | -                      |                 |                 |                  |                      |                  |                 | +                 |
|                                |                         |                        | •                             |                             |                        |                 |                        |                        |                                | -                          |                      |                        | -               |                 |                  |                      |                  |                 | GCTC              |
|                                | м                       |                        |                               |                             |                        |                 |                        |                        |                                |                            |                      |                        |                 |                 |                  |                      |                  |                 |                   |
| _                              |                         |                        |                               |                             |                        |                 |                        |                        |                                |                            |                      |                        |                 |                 |                  |                      |                  |                 |                   |
| _                              | ••                      | -                      | _                             |                             |                        |                 |                        |                        |                                |                            |                      |                        |                 |                 |                  |                      |                  |                 |                   |
|                                |                         | CCA                    | GAG                           | GAT                         | CTT                    | GAG             | CGC                    | CTT                    | CTG                            | CCC                        | :GCA                 | .CAA                   | .GGI            | CTC             | AGC              | TGG                  | GCA              | GTT             | TTCC              |
| CG                             | GAC                     |                        | -+-                           |                             |                        | +               |                        |                        |                                | +                          |                      |                        | -+-             |                 |                  | +                    |                  |                 | +                 |
| GG                             | GAC                     | GGT                    | -+-<br>CTC                    | CTA                         | <br>GAA                | +<br>CTC        | GCG                    | GAA                    | GAC                            | +                          | CGI                  | GTI                    | -+-             | GAG             | TCG              | ACC                  | CGT              | CAA             | +<br>AAGG         |
| GG                             | GAC                     | GGT                    | -+-<br>CTC                    | CTA                         | <br>GAA                | +<br>CTC        | GCG                    | GAA                    | GAC                            | +                          | CGI                  | GTI                    | -+-             | GAG             | TCG              | ACC                  | CGT              | CAA             | +<br>AAGG         |
| CG<br><br>GC<br>R              | GAC<br>CTG              | GGT<br>Q               | -+-<br>CTC<br>R               | CTA                         | GAA<br>L               | CTC             | GCG<br>A               | GAA<br>F               | GAC<br>C                       | +<br>GGG                   | CGT<br>H             | GTT<br>K               | -+-<br>CCA<br>V | GAG<br>S        | TCG<br>A         | ACC<br>G             | CGT              | CAA<br>F        | AAGG<br>S         |
| GC<br>R<br>AC                  | GAC<br>CTG<br>T         | GGT<br>Q               | -+-<br>CTC<br>R<br>TGT        | CTA<br>I<br>CCG             | GAA<br>L<br>AGA        | CTC<br>S        | GCG<br>A               | GAA<br>F               | GAC<br>C                       | GGG                        | GGC                  | GTT<br>K               | CCA<br>V        | GAG<br>S        | TCG<br>A         | ACC<br>G             | CGT<br>Q         | CAA<br>F<br>GCT | AAGG<br>S<br>CGTA |
| GC<br>R                        | GGAC<br>CTG<br>T        | GGT<br>Q               | -+-<br>CTC<br>R<br>TGT        | CTA<br>I<br>CCG             | GAA<br>L<br>AGA        | CTC<br>S<br>CAC | GCG<br>A               | GAA<br>F               | GAC<br>C                       | GGG<br>P                   | CGT<br>H             | GTI<br>K               | CCA<br>V        | GAG<br>S        | TCG<br>A         | ACC<br>G             | CGT<br>Q         | CAA<br>F<br>GCT | AAGG<br>S         |
| GC<br>R<br>AC                  | GGAC<br>CTG<br>T        | GGT<br>Q<br>GCG        | -+-<br>CTC<br>R<br>TGT<br>-+- | CTA<br>I<br>CCG<br>GGC      | GAA<br>L<br>AGA<br>TCT | CAC             | GCG<br>A<br>CAA        | GAA<br>F<br>AAT        | GAC<br>C<br>CGA                | +<br>GGG<br>P<br>.GGT<br>+ | GGC                  | GTT<br>K<br>CCA        | CCA<br>V<br>GTT | GAG<br>S<br>TGT | TCG<br>A<br>PAAC | ACC<br>G<br>GGA<br>+ | CGT<br>Q<br>.CCT | CAA<br>F<br>GCT | AAGG<br>S<br>CGTA |
| GC<br>R<br>AC                  | GAC<br>CTG<br>T<br>GCTT | GGT<br>Q<br>GCG        | -+-<br>CTC<br>R<br>TGT<br>-+- | CTA<br>I<br>CCG<br>GGC      | GAA<br>L<br>AGA<br>TCT | CAC             | GCG<br>A<br>CAA        | GAA<br>F<br>AAT        | GAC<br>C<br>CGA                | +<br>GGG<br>P<br>.GGT<br>+ | GGC                  | GTT<br>K<br>CCA        | CCA<br>V<br>GTT | GAG<br>S<br>TGT | TCG<br>A<br>PAAC | ACC<br>G<br>GGA<br>+ | CGT<br>Q<br>.CCT | CAA<br>F<br>GCT | AAGG<br>S<br>CGTA |
| CG<br>GG<br>R<br>AG<br>TG<br>S | GAC<br>CTG<br>T<br>GCTT | GGT<br>Q<br>GCG<br>CGC | TGT<br>ACA                    | CTA<br>I<br>CCG<br>GGC<br>R | GAA<br>L<br>AGA<br>TCT | CTC S CAC+ GTG  | GCG<br>A<br>CAA<br>GTT | GAA<br>F<br>AAT<br>TTA | GAC<br>C<br>CGA<br>CGA<br>.GCT | GGG<br>P<br>.GGT<br>+      | GGC<br>H<br>GGC<br>A | GTT<br>K<br>CCA<br>GGT | CCA<br>V<br>GTT | GAG<br>S<br>TGT | TCG<br>A<br>PAAC | ACC<br>G<br>GGA<br>+ | CGT<br>Q<br>.CCT | CAA<br>F<br>GCT | AAGG<br>S<br>CGTA |

| FIC                             | 3. 6,    | Imn           | nuno                    | gen 2   | 2 (SE         | Q II    | D NC         | ). 11  | )        |              |              |              |              |        |         |           |         |          |                |   |
|---------------------------------|----------|---------------|-------------------------|---------|---------------|---------|--------------|--------|----------|--------------|--------------|--------------|--------------|--------|---------|-----------|---------|----------|----------------|---|
| G                               | P        | V             | P                       | P       | Š             | T       | A            | L      | R        | $\mathbf{E}$ | L            | I            | E            | E      | L       | V         | N       | I        | $\mathbf{T}$   |   |
| Q                               | N        | Q             | K                       | A       | P             | L       | C            | N      | G        | S            | M            | V            | W            | S      | I       | N         | L       | T        | Α              |   |
| G                               | M        | Y             | C                       | A       | A             | L       | E            | S      | L        | I            | N            | V            | S            | G      | C       | S         | A       | I        | E              |   |
| K                               | T        | Q             | R                       | M       | L             | G       | G            | F      | C        | P            | H            | K            | F            | N      | N       | F         | Т       | V        | S              |   |
| F                               | W        | L             | R                       | V       | Р             | K       | V            | S      | Α        | S            | H            | L            | E            | D      | T       | K         | I       | E        | $\overline{v}$ |   |
| A                               | Q        | F             | $\overline{\mathbf{v}}$ | K       | D             | L       | L            | L      | H        | L            | K            | K            | L            | F      | R       | E         | G       | R        | F              |   |
| N                               |          |               |                         |         |               |         |              |        |          |              |              |              |              |        |         |           |         |          |                |   |
|                                 |          |               |                         |         |               |         |              |        |          |              |              |              |              |        |         |           |         |          |                |   |
| FI                              | G.       | 7,            | Imm                     | uno     | gen           | 3       | (SE          | QΙ     | D N      | Ο.           | 12)          |              |              |        |         |           |         |          |                |   |
| F                               | N        | N             | F                       | T       | _V_           | S       | F            | W      | L        | R            |              | Р            | K            | V      | S       | A         | S       | H        | L              |   |
| $\mathbf{E}$                    | G        | P             | V                       | P       | P             | S       | T            | A      | L        | R            | E            | L            | I            | E      | E       | L         | V       | N        | I              |   |
| T                               | Q        | N             | Q                       | K       | A             | P       | L            | C      | N        | G            | S            | M            | V            | M      | S       | I         | N       | L        | $\mathbf{T}$   |   |
| Α                               | G        | M             | Y                       | C       | A             | Α       | L            | E      | S        | L            | I            | N            | V            | S      | G       | C         | S       | A        | I              |   |
| $\mathbf{E}$                    | K        | ${f T}$       | Q                       | R       | M             | L       | G            | G      | F        | C            | P            | H            | K            | V      | S       | Α         | G       | Q        | F              |   |
| S                               | S        | L             | H                       | V       | R             | D       | T            | K      | I        | E            | V            | A            | Q            | F      | V       | K         | D       | L        | L              |   |
| L                               | H        | L             | K                       | K       | L             | F       | R            | E      | G        | R            | F            | N            |              |        |         |           |         |          |                |   |
|                                 |          |               |                         |         |               |         |              |        |          |              |              |              |              |        |         |           |         |          |                |   |
|                                 | G.       | 8,            |                         |         | gen           |         | •            | Q I    |          |              | 13)          |              |              |        |         |           |         |          |                |   |
| G                               | P        | V             | P                       | R       | s             | V       | S            | L      | P        | L            | $\mathbf{T}$ | L            | K            | E      | L       | I         | E       | E        | L              |   |
| S                               | N        | I             | ${f T}$                 | Q       | D             | Q       | $\mathbf{T}$ | P      | L        | C            | N            | G            | S            | M      | V       | W         | S       | V        | D              |   |
| L                               | A        | A             | G                       | G       | F             | C       | V            | A      | L        | D            | S            | L            | $\mathbf{T}$ | N      | I       | S         | И       | С        | N              |   |
| A                               | I        | Y             | R                       | ${f T}$ | Q             | R       | I            | L      | H        | G            | L            | C            | N            | R      | K       | F         | N       | N        | F              |   |
| $\underline{\mathbf{T}}$        | <u>v</u> | _ <u>s</u>    | F                       | W       | L             | R       | V            | P      | K        | V            | S            | A            | S            | H      | L       | E         | D       | T        | K              |   |
| I                               | E        | V             | Α                       | H       | F             | I       | T            | K      | L        | L            | S            | Y            | T            | K      | Q       | L         | F       | R        | H              | G |
| P                               | F        |               |                         |         |               |         |              |        |          |              |              |              |              |        |         |           |         |          |                |   |
|                                 |          | _             | _                       |         |               | _       |              |        |          |              | - a \        |              |              |        |         |           |         |          |                |   |
|                                 | G.       | 9,            |                         |         | gen           |         |              | Q I    |          |              | 14)          | _            | 7.5          | **     | ~       | 70        | _       | **       | _              |   |
| F                               | N        | $\frac{n}{N}$ | F                       | T       | <u> v</u>     | S       | F            | W      | <u>L</u> | R            | <u>v</u>     | _ <u>P</u> _ | _ <u>K</u>   | V      | S       | <u> A</u> | S       | <u>H</u> | _뉴             |   |
| Ē                               | G        | P             | V                       | P       | R             | S       | V            | S      | L        | P            | L            | T            | L            | K      | E       | L         | I       | E        | E              |   |
| Г                               | S        | N             | I                       | T       | Q             | D       | Q            | T      | P        | L            | C            | N            | G            | S      | M       | V         | W       | S        | V              |   |
| D                               | L        | A             | A                       | G       | G             | F       | C            | V      | A        | L            | D            | S            | L            | T      | N       | I         | S       | N        | C              |   |
| И                               | A        | I             | Y                       | R       | T             | Ď       | R            | I      | L        | H            | G            | L            | C<br>H       | N      | R       | K<br>T    | A       | P        | T              |   |
| T                               | V        | S             | S                       | L       | P             | D       | T            | K      | I        | E            | Λ            | A            | п            | F      | I       | T         | K       | L        | L              |   |
| S                               | Y        | T             | K                       | Q       | L             | F       | R            | H      | G        | P            | F            |              |              |        |         |           |         |          |                |   |
| <b>ਹ</b> ਾ ਹ                    | G.       | 10            | Tmr                     |         | con           | 6       | 100          | ·      | א כדי    | ·            | 1 = \        |              |              |        |         |           |         | Ł        |                |   |
|                                 | -        | 10<br>N       |                         | T       | gen<br>V      |         |              |        |          |              |              | D            | v            | 7.7    | c       | 70        | c       | •        | т              |   |
| F                               | N<br>G   | _N<br>P       |                         | P       | $\frac{v}{R}$ | _S<br>S | - F<br>V     | W<br>S | L<br>L   | R<br>P       | _ <u>v</u> _ | · P<br>T     | K<br>L       | V<br>K | _S<br>E | A<br>L    | _S<br>I | H<br>E   | <u>L</u>       |   |
| $\frac{\mathrm{E}}{\mathrm{L}}$ | T        | N             | v<br>I                  | T       | Q             | D       | Q<br>Q       | T      | Ъ        | L            | C            | N            | G            | S      | M       | Л         | M       | S        | V              |   |
| D                               |          | A             |                         | G       |               | F       | C            | V      | A        | L            | D            | S            | L            | T      | N       | v<br>I    | S       | N        |                |   |
|                                 | Т.       |               |                         |         | 1 -           |         |              |        |          |              |              |              |              |        |         |           |         |          |                |   |
|                                 | L        |               | A<br>F                  |         | G<br>т        |         |              |        |          |              |              |              |              |        |         |           |         |          | С<br>T         |   |
| N                               | Α        | I             | F                       | R       | T             | Q       | R            | I      | L        | Н            | A            | L            | С            | N      | R       | K         | A       | P        | T              |   |
|                                 |          |               |                         |         |               |         |              |        |          |              |              |              |              |        |         |           |         |          |                |   |

WO 2004/019974 PCT/GB2003/003703 6/34

### FIG 11, Immunogen 7 (SEQ ID NO. 16)

TACGTACATTCCGACGGCTCTTATCCAAAAGACAAGTTTGAGAAAATCAATGGCACTTGG YVHSDGSYPKDKFEKINGTW TACTACTTTGACAGTTCAGGCTATATGCTTGCAGACCGCTGGAGGAAGCACACAGACGGC Y Y F D S S G Y M L A D R W R K H T D G  ${\tt AACTGGTACTGGTTCGACAACTCAGGCGAAATGGCTACAGGCTGGAAGAAAATCGCTGAT}$ NWYWFDNSGEMATGWKKIAD AAGTGGTACTATTTCAACGAAGAAGGTGCCATGAAGACAGGCTGGGTCAAGTACAAGGAC K W Y Y F N E E G A M K T G W V K Y K D ACTTGGTACTAGACGCTAAAGAAGGCGCCATGCAATACATCAAGGCTAACTCTAAG TWYYLDAKEGAMQYIKANSK F I G I T E G V M V S N A F I Q S A D G ACAGGCTGGTACTACCTCAAACCAGACGGAACACTGGCAGACAGGCCAGAAGGCCCTGTG ------T G W Y Y L K P D G T L A D R P E G P V CCTCCTCTAGCGCCCTCAAGGAGCTCATTGAGGAGCTGGCCAACATCACCCAGAACCAG P P S S A L K E L I E E L A N I T Q N Q AAGGCTCCGCTCTGCAATGGCAGCATGGTATGGAGCATCAACCTGACAGCTGGCATGTAC K A P L C N G S M V W S I N L T A G M Y TGTGCAGCCCTGGACTCCCTGATCAACGTGTCAGGCTGCAGTGCCATCGAGCGGACCCAG C A A L D S L I N V S G C S A I E R T Q AGGATCTTGAGCGCCTTCTGCCCGCACAAGGTCTCAGCTGGGCAGTTTTCCAGCTTGCGT ------R I L S A F C P H K V S A G Q F S S L R GTCCGAGACACCAAAATCGAGGTGGCCCAGTTTGTAACGGACCTGCTCGTACATTTAAAG V R D T K I E V A Q F V T D L L V H L K AGACTTTTTCGCCAGGGAACGTTCAAC RLFRQGTFN

## FIG. 12, Immunogen 8 (SEQ ID NO. 17)

TCCTCTCATTCTTAACATGGCGAACACCCAGATGAAGTCCGATAAAATCATCATCGCG S S H S S N M A N T Q M K S D K I I I A CACAGGGGAGCTAGCGGGTATCTGCCTGAGCACACCCTGGAGTCCAAGGCTCTGGCGTTC H R G A S G Y L P E H T L E S K A L A F  ${\tt GCCCAGCAGGCTGACTACCTGGAGCAGGACCTGGCGATGACAAAGGATGGCCGCCTCGTG}$ A Q Q A D Y L E Q D L A M T K D G R L V GTGATCCATGACCATTTTCTCGACGGACTGACCGACGTCGCCAAGAAGTTCCCCCACCGC V I H D H F L D G L T D V A K K F P H R  ${\tt CATAGGAAGGACGGAGGTATTACGTGATTGACTTCACCCTCAAGGAGATCCAGAGCCTG}$ -----HRKDGRYYVIDFTLKEIQSL GAGATGACCGAGAACTTCGAGACCGGCCCTGTGCCTCCTCTAGCGCCCTCAAGGAGCTC E M T E N F E T G P V P P S S A L K E L ATTGAGGAGCTGGCCAACATCACCCAGAACCAGAAGGCTCCGCTCTGCAATGGCAGCATG I E E L A N I T Q N Q K A P L C N G S M  ${\tt GTATGGAGCATCAACCTGACAGCTGGCATGTACTGTGCAGCCCTGGACTCCCTGATCAAC}$ \_\_\_\_\_\_\_\_\_\_\_ V W S I N L T A G M Y C A A L D S L I N GTGTCAGGCTGCAGTCGCAGCCGGACCCAGAGGATCTTGAGCGCCTTCTGCCCGCAC V S G C S A I E R T Q R I L S A F C P H AAGGTCTCAGCTGGGCAGTTTTCCAGCTTGCGTGTCCGAGACACCAAAATCGAGGTGGCC K V S A G Q F S S L R V R D T K I E V A CAGTTTGTAACGGACCTGCTCGTACATTTAAAGAGACTTTTTCGCCAGGGAACGTTCAAC Q F V T D L L V H L K R L F R Q G T F N

#### FIG. 13, Immunogen 9 (SEQ ID NO. 18)

 ${\tt TTTAATAATTTTACCGTTAGCTTTTGGTTGCGTGTTCCTAAAGTATCTGCTAGTCATTTA}$ \_\_\_\_\_\_\_ F N N F T V S F W L R V P K V S A S H L  ${\tt GAAGGCCCTGTGCCTCTAGCGCCCTCAAGGAGCTCATTGAGGAGCTGGCCAACATC}$ +------+----+----+ E G P V P P S S A L K E L I E E L A N I ACCCAGAACCAGAAGGCTCCGCTCTGCAATGGCAGCATGGTATGGAGCATCAACCTGACA \_\_\_\_\_\_ T Q N Q K A P L C N G S M V W S I N L T GCTGGCATGTACTGTGCAGCCCTGGACTCCCTGATCAACGTGTCAGGCTGCCAGTCCCATC \_\_\_\_\_+ A G M Y C A A L D S L I N V S G C S A I GAGCGGACCCAGAGGATCTTGAGCGCCTTCTGCCCGCACAAGGTCTCAGCTGGGCAGTTT \_\_\_\_\_\_ ERTQRILSAFCPHKVSAGQF TCCAGCTTGCGTGTCCGAGACACCAAAATCGAGGTGGCCCAGTTTGTAACGGACCTGCTC -------S S L R V R D T K I E V A Q F V T D L L GTACATTTAAAGAGACTTTTTCGCCAGGGAACGTTCAAC V H L K R L F R Q G T F N

### FIG. 14, Immunogen 10 (SEQ ID NO. 19)

TTTAATAATTTTACCGTTAGCTTTTGGTTGCGTGTTCCTAAAGTATCTGCTAGTCATTTA \_\_\_\_\_+ F N N F T V S F W L R V P K V S A S H L GAAGGCCCTGTGCCTCCCTCTAGCGCCCTCAAGATTCTCATTGAGGAGCTGGCCAACATC EGPVPPSSALKILIEELANI ACCCAGAACCAGAAGGCTCCGCTCTGCAATGGCAGCATGGTATGGAGCATCAACCTGACA T Q N Q K A P L C N G S M V W S I N L T GCTGGCATGTACTGTGCAGCCCTGGACTCCCTGATCAACGTGTCAGGCTGCAGTGCCATC -----AGMYCAALDSLINVSGCSAI GAGCGGACCCAGAGGATCTTGAGCGCCTTCTGCCCGCACAAGGTCTCAGCTGGGCAGTTT \_\_\_\_\_ ERTQRILSAFCPHKVSAGQF  ${\tt TCCAGCTTGCGTGTCCGAGACACCAAAATCGAGGTGGCCCAGTTTGTAACGGACCTGCTC}$ -----S S L R V R D T K I E V A Q F V T D L L GTACATTTAAAGAGACTTTTTCGCCAGGGAACGTTCAAC V H L K R L F R Q G T F N

WO 2004/019974 PCT/GB2003/003703

FIG 15, Immunogen 11 (SEQ ID NO. 20)

Ρ V ₽ P S S A L K E L I E E  $\mathbf{L}$ Α N I  $\mathbf{T}$ G Q N Q K P L C N G S М V W S Ι N L  $\mathbf{T}$ Α Α C I G M Y C Α Α L D S L I N V S G S Α Ε S F C P Η K S G F S R Т R I L Α V Α Q Q V F V Т L V Т I  $\mathbf{E}$ Q D L S L H V R D K Α Н L K R L  $\mathbf{F}$ R Q G R F N

#### FIG. 16, Immunogen 12 (SEQ ID NO. 21)

G Р V P Р S T A L K  $\mathbf{E}$ L I E  $\mathbf{E}$ L V N I T C N G V I  $\mathbf{T}$ Α Q Ν Q K Α Ρ L S M W S N L C G М Y C A A L D S L I N v S G S A I E R I L S Α F С P H K V S Α G Q F S R  $\mathbf{T}$ Q s R  $\mathbf{v}$ R D Т ĸ I  $\mathbf{E}$ v A Q F V Т D L L v L F R G Т F N L K K L Q Η

#### FIG. 17, Immunogen 13 (SEQ ID NO. 22)

G P V P P S S A L R E L I E E L A N I T Q N Q K A P L C N G S M V W S I N L T A G M Y C A A L E S L I N V S G C S A I D K T Q R M L S A F C P H K V S A G Q F S S L H V R D T K I E V A Q F V K D L L V H L K R L F R D G R F N

# FIG. 18, pCDNmIL13CDFC (SEQ ID NO. 23)

| • |            |          |           |        |           |     |     |          |      |            |     |     |               | Kp   | nΙ    |      |      |       |                 |      |            |          |
|---|------------|----------|-----------|--------|-----------|-----|-----|----------|------|------------|-----|-----|---------------|------|-------|------|------|-------|-----------------|------|------------|----------|
|   | 961        | AAC      |           |        |           |     |     |          |      |            |     |     |               |      |       |      |      |       |                 |      |            | 1020     |
| ъ | <b>701</b> |          |           |        | Τ         |     |     |          |      |            |     |     |               |      |       |      |      |       |                 |      |            |          |
| ם |            |          |           |        |           |     |     |          |      |            |     |     |               |      |       |      |      |       |                 |      | <u>v _</u> | <b>=</b> |
|   | 1021       | GAC      |           |        |           |     |     |          |      |            |     |     |               |      |       |      |      |       |                 |      |            | 1080     |
| ъ |            | <u>T</u> | <u> A</u> | v      | ь         | A   | L   | <u>A</u> | С    | <u>.I.</u> | G   | G   | ь             | A    | A     | P    | G    | P     | v               | p    | R          | -        |
|   |            | TTC      |           |        |           |     |     |          |      |            |     |     |               |      |       |      |      |       |                 |      |            |          |
|   | 1081       |          |           |        | +         |     |     | -+-      |      |            | +   |     |               |      | +     |      |      | -+    |                 |      | +          | 1140     |
| b |            | s        | v         | s      | L         | P   | L   | T        | L    | K          | E   | L   | I             | E    | E     | ľ    | s    | N     | I               | T    | Q          | -        |
|   | 1141       | AGA      |           |        |           |     |     |          |      |            |     |     |               |      |       |      |      |       |                 |      |            | 2200     |
|   | 1141       |          |           |        |           |     |     |          |      |            |     |     |               |      |       |      |      |       |                 |      |            | 1200     |
| b |            |          | Q         |        | P         |     |     |          |      |            |     |     |               |      |       |      |      |       |                 |      | G          | -        |
|   | 1201       | GTT      |           |        |           |     |     |          |      |            |     |     |               |      |       |      |      |       |                 |      |            | 1260     |
| b |            | F        | С         | v      | A         | ь   | D   | s        | L    | T          | N   | ı   | s             | N    | С     | N    | A    | ı     | Y               | R    | т          | _        |
|   |            | CCA      | .GCG      | TAT    | TTT       | GCA | TGG | CCT      | CTG  | TAA        | CCG | CAA | GTT           | TAA' | TAA'  | TTT' | rac( | CGT   | rago            | TT.  | rtg        |          |
|   | 1261       |          |           |        | +         |     |     | -+-      |      |            | +   |     |               |      | +     |      |      | -+-   |                 |      | +          | 1320     |
| b |            | Q        | R         | I      | L         | н   | G   | L        | С    | N          | R   | ĸ   | F             | N    | N     | F    | T    | v     | S               | F    | W          | -        |
|   | 1221       | GTT      |           |        |           |     |     |          |      |            |     |     |               |      |       |      |      |       |                 |      |            | 1200     |
|   | 1321       |          |           |        |           |     |     |          |      |            |     |     |               |      |       |      |      |       |                 |      |            | 1380     |
| b |            |          |           |        | P         |     |     |          |      |            |     |     |               |      |       |      |      |       |                 |      | Н          | -        |
|   | 1381       |          |           |        | AAA:<br>+ |     |     |          |      |            |     |     |               |      |       |      |      |       |                 |      |            | 1440     |
| b |            | F        | I         | T      | ĸ         | L   | L   | s        | Y    | т          | ĸ   | 0   | L             | F    | R     | н    | G    | P     | F               | L    | Е          | _        |
|   |            |          |           |        |           |     | Bam |          |      |            |     | _   |               |      |       |      |      |       |                 | _    | _          |          |
|   |            | GGT      | ССТ       | ייייני | 'Cca      |     |     | 1        | ייים | ന്ദ്രമ     | GCC | ממי | <b>ስጥ</b> ር ( | ממרי | מבויי | ממים | מממ  | ררם ו | מריז<br>ריז מרי | ነጥር! | 200        |          |
|   | 1441       |          |           |        |           |     |     |          |      |            |     |     |               |      |       |      |      |       |                 |      |            | 1500     |
| b |            | <u>v</u> | L         | F      | Q         | G   | P   | Ġ        | S    | E          | P   | K   | S             | A    | D     | к    | T    | Н     | T               | С    | P          | -        |
|   |            | ACC      |           |        |           |     |     |          |      |            |     |     |               |      |       |      |      |       |                 |      |            |          |
|   | 1501       |          |           |        | +         |     |     | -+-      |      |            | +   |     |               |      | +     |      |      | -+-   |                 |      | +          | 1560     |
| b |            | P        | С         | P      | A         | P   | E   | L        | L    | G          | G   | ₽   | S             | V    | F     | L    | F    | P     | ₽               | K    | P          | -        |
|   | 1561       | CAA      |           |        |           |     |     |          |      |            |     |     |               |      |       |      |      |       |                 |      |            | 1620     |
| ь |            |          |           |        |           |     |     |          |      |            |     |     |               |      |       |      |      | -     |                 |      | s          |          |
|   |            |          |           |        | ccc       |     |     | _        |      |            |     |     |               |      |       | -    | ·    |       | -               |      | _          |          |
|   | 1621       |          |           |        |           |     |     |          |      |            |     |     |               |      |       |      |      |       |                 |      |            | 1680     |
| b |            | Н        | E         | D      | P         | E   | v   | K        | F    | N          | W   | Y   | v             | D    | G     | v    | E    | v     | H               | N    | A          | _        |

|   | 1681  | CAA                                     | GAC  | AAA  | GCC  | 3CG( | GAG     | GGA(   | GCA  | STA    | CAA    | <u></u> |      |              | _CG      | rgr   | GT      | CAGO       | CGT     | CT   | CAC      | 1740 |
|---|---|---|------|------|------|------|---------|--------|------|--------|--------|---------|------|--------------|----------|-------|---------|------------|---------|------|----------|------|
| þ |   | ĸ                                       | T    | K    | P    | R    | E       | E      | Q    | Y      | N      | s       | T    | Y            | R        | v     | v       | s          | v       | L    | T        | -    |
|   | 1741  | CGT                                     | CCT  | GCA  | CCA  | GGA( | CTG     | GCT    | GAA' | rgg    | CAA    | GGA     | GTA  | CAA          | GTG(     | CAA   | GGT     | CTC(       | CAA     | CAA  | AGC<br>+ | 1800 |
| þ |   | v                                       | L    | H    | Q    | D    | W       | L      | N    | G      | ĸ      | E       | Y    | K            | С        | K     | v       | s          | N       | K    | A        | -    |
|   | GGTGTACACCCTGCCCCCATCCCGGGAGGAGATGACCAAGAACCAGGTCAGCCTGACCTG  |   |      |      |      |      |         |        |      |        |        |         |      |              |          | 1860  |         |            |         |      |          |      |
| b |   | L                                       | P    | A    | P    | I    | E       | K      | T    | I      | s      | ĸ       | A    | K            | G        | Q     | P       | R          | E       | P    | Q        | -    |
|   | L P A P I E K T I S K A K G Q P R E P Q -  GGTGTACACCCTGCCCCCATCCCGGGAGGAGATGACCAAGAACCAGGTCAGCCTGACCTG  1861 |   |      |      |      |      |         |        |      |        |        |         |      |              |          | 1920  |         |            |         |      |          |      |
| b |   | v                                       | Y    | T    | L    | P    | P       | s      | R    | E      | E      | M       | T    | ĸ            | N        | Q     | v       | s          | L       | T    | C        | -    |
|   | 1921  | V Y T L P P S R E E M T K N Q V S L T C |      |      |      |      |         |        |      |        |        |         |      |              |          |       | 1980    |            |         |      |          |      |
| b |   |   |      |      |      |      |         |        |      |        |        |         |      |              |          |       |         |            |         |      | ₽        |      |
|   | 1981  | GGA                                     | GAA  | CAA  | CTA  | CAA  | GAC     | CAC    | GCC  | TCC    | CG1    | GCI     | GGA  | CTC          | CGA<br>+ | CGG   | CTC     | CTT<br>-+- | CTT     | CCT  | CTA      | 2040 |
| þ |   |   |      |      |      |      |         |        |      |        |        |         |      |              |          |       |         |            |         |      | Y        |      |
|   | 2041  | TAC                                     | CAZ  | AGC? | CAC  | CGI  | GGA     | CAF    | GAG  | CAC    | GTG    | GC      | AGCA | GGG          | GAA<br>+ | CGT   | CTI     | CTC        | ATG     | CTC  | CGT      | 2100 |
| b |   |   |      |      |      |      |         |        |      |        |        |         |      |              |          |       |         |            |         |      | v        |      |
|   | 2101  | GAT                                     | rgcz | ATG  | AGG( | TCI  | rGCZ    | +-     | ACC  | CT     | ACAC   | GC.     | AGAZ | AGAC         | +        | CTC   | CCI     | GTC        | TCC     | :GGG | AAT:     | 2160 |
| þ |   | M                                       | H    | E    | A    | L    | H       | N      | H    | Y      | T      | Q       | K    | s            | L        | s     | L       | s          | P       | G    | K        | -    |
|   |   |   |      | noe: |      | nac  | -100 CT | N N C' | 30m  | ריא בי | ግክ ጉ 4 | י עיחיי |      | nHI<br> <br> | יתמב     | יריפי | ז מידים | / ርርብ      | ביריריב | \CC2 | ACI      | ,    |
|   | 2161  | A'I'                                    | 3AG  |      | -4-  |      | - L - I | +·     |      |        |        | +       |      |              | -+       |       |         | +-         |         |      | +        | 2220 |
| b |   | *                                       |      |      |      |      |         |        |      |        |        |         |      |              |          |       |         |            |         |      |          |      |

12 of 34

# FIG. 19, pCDNmIL13p30FC (SEQ ID NO. 24)

|   |      |      |         |     |          |      |          |     |          |     |      |      |      | Kpr       | ıI   |      |            |     |      |      |            |      |
|---|------|------|---------|-----|----------|------|----------|-----|----------|-----|------|------|------|-----------|------|------|------------|-----|------|------|------------|------|
|   |      | AAC  |         |     |          |      |          |     |          |     |      |      |      |           |      |      |            |     |      |      |            |      |
|   | 961  |      |         |     | +        |      |          | -+  |          |     | +-   |      |      | 4         |      |      |            | -+  |      |      | -+         | 1020 |
| b |      |      |         |     |          |      |          |     |          |     |      |      |      |           |      |      | <u>M</u> _ | A   | L    | W    | v          | _    |
|   |      | GAC' |         |     |          |      |          |     |          |     |      |      |      |           |      |      |            |     |      |      |            |      |
|   | 1021 |      |         |     | <b>4</b> |      |          | -+  |          |     | +-   |      |      |           |      |      |            |     |      |      | +          | 1080 |
| b |      | T    | A       | v   | <u>L</u> | A    | <u>L</u> | A   | С        | L   | G    | G_   | L_   | <u>A_</u> | A    | P    | F          | N   | N    | F    | Ŧ          | -    |
|   | 1081 | CGT  |         |     |          |      |          |     |          |     |      |      |      |           |      |      |            |     |      |      |            | 1140 |
|   | 1001 |      |         |     |          |      |          |     |          |     |      |      |      |           |      |      |            |     |      |      |            |      |
| þ |      | V    | s       | F   | W        | L    | R        | V   | P        | К   | V    | s    | A    | S         | н    | L    | E          | G   | Þ    | V    | P          | -    |
|   | 1141 | ACG  |         |     |          |      |          |     |          |     |      |      |      |           |      |      |            |     |      |      |            | 1200 |
| ь |      | R    |         |     |          |      |          |     |          |     |      |      |      |           |      |      |            |     |      |      |            |      |
| Ь |      |      |         |     |          |      |          |     |          |     |      |      |      |           |      |      |            |     |      |      |            | -    |
|   | 1201 | ACA  |         |     |          |      |          |     |          |     |      |      |      |           |      |      |            |     |      |      |            | 1260 |
| b |      | 0    | מ       | 0   | т        | Þ    | τ,       | C   | N        | G   | s    | м    | v    | w         | s    | v    | ם          | т.  | Δ.   | Δ    | G          | _    |
| ~ |      | _    |         |     |          |      |          |     |          |     |      |      |      |           |      |      |            |     |      |      |            |      |
|   | 1261 |      | GTT<br> |     |          |      |          |     |          |     |      |      |      |           |      |      |            |     |      |      |            | 1320 |
| b |      | G    | F       | С   | v        | A    | L        | D   | s        | L   | T    | N    | ı    | s         | N    | С    | N          | A   | I    | Y    | R          | _    |
|   |      | TAC  | CCA     | GCG | тат      | TTTT | GCA'     | rgg | ССТ      | CTG | TAA  | CCG  | CAAC | 3GC(      | ccc  | CACT | raco       | GT( | CTCC | CAGO | ст         |      |
|   | 1321 |      |         |     |          |      |          |     |          |     |      |      |      |           |      |      |            |     |      |      |            | 1380 |
| b |      | T    | Q       | R   | I        | L    | H        | G   | L        | С   | N    | R    | ĸ    | A         | P    | T    | T          | v   | s    | s    | L          | -    |
|   |      | ccc  | :CGA    | TAC | CAA      | AAT  | CGA.     | AGT | AGC      | CCA | CTT: | TAT: | rac: | AAA       | ACTO | CTC  | CAG        | CTA | CAC  | AAA  | <b>SCA</b> |      |
|   | 1381 |      |         |     | +        |      |          | -+- |          |     | +    |      |      |           | +    |      |            | -+- |      |      | +          | 1440 |
| b |      | P    | D       | T   | ĸ        | I    | E        | v   | A        | H   | F    | I    | T    | ĸ         | L    | L    | s          | Y   | T    | ĸ    | Q          | -    |
|   |      |      |         |     |          |      |          |     |          |     |      |      |      |           | I    | Bami | ij         |     |      |      |            |      |
|   |      | ACT  | GTT     | TCG | CCA      | CGG  | ccc      | CTT | CCT      | GGA | GGT  | CCT  | 3TT( | Ccca      | aGG/ | ACCZ | AGG2       | ATC | CGAC | 3CC  | CAA        |      |
|   | 1441 |      |         |     | +        |      |          | -+- |          |     | +    |      |      |           | +    |      |            | -+- |      |      | +          | 1500 |
| b |      | L    | F       | R   | н        | G    | P        | F   | <u>L</u> | E   | v    | L    | F    | Q         | G    | P    | G          | S   | E    | P    | K          | -    |
|   |      |      | GGC     |     |          |      |          |     |          |     |      |      |      |           |      |      |            |     |      |      |            |      |
|   | 1501 |      |         |     | +        |      |          | -+- |          |     | +    |      |      |           | +    |      |            | -+- |      |      | +          | 1560 |
| b |      | S    | A       | D   | K        | T    | H        | T   | C        | P   | P    | C    | P    | A         | P    | E    | L          | L   | G    | G    | P          | -    |
|   | 1561 |      | AGT     |     |          |      |          |     |          |     |      |      |      |           |      |      |            |     |      | -    |            | 1620 |
|   | 1301 |      |         |     |          |      |          |     |          |     |      |      |      |           |      |      |            |     |      |      |            |      |
| b |      |      |         |     |          |      |          |     |          |     |      |      |      |           |      |      |            |     |      |      | E          | -    |
|   | 1621 |      |         |     |          |      |          |     |          |     |      |      |      |           |      |      | -          |     | -    |      | GTA<br>+   | 1680 |
| b |      | 17   | т       | c   | 17       | T/   | 17       | ח   | v        | S   | н    | F.   | ת    | p         | F    | v    | ĸ          | p   | λŢ   | D.T  | Y          | _    |
| ~ |      | •    | -       | -   | •        | •    | •        | ט   | •        | _   |      | ~    | ט    | _         |      | -    | 20         | -   | 44   | ••   | -          |      |

 $\tt CGTGGACGGCGTGGAGGTGCATAATGCCAAGACAAAGCCGCGGGAGGAGCAGTACAACAG$ 

|   | 1681 |     |     |     | +   |     |          | -+- |     |     | +   |     |     |      | <b>+</b> |     |     | -+- |     |     | +   | 1740 |
|---|------|-----|-----|-----|-----|-----|----------|-----|-----|-----|-----|-----|-----|------|----------|-----|-----|-----|-----|-----|-----|------|
| b |      | v   | D   | G   | v   | E   | v        | H   | N   | A   | K   | T   | K   | P    | R        | E   | E   | Q   | Y   | N   | s   | -    |
|   | 1741 | CAC |     |     |     |     |          |     |     |     |     |     |     |      |          |     |     |     |     |     |     | 1800 |
| b | 1/41 |     |     |     |     |     |          |     | L   |     |     |     |     |      |          |     |     |     |     |     |     | -    |
| _ |      | GTA | -   |     |     |     | -        |     |     |     |     |     |     | _    |          |     |     |     |     |     |     |      |
|   | 1801 |     |     |     | +   |     |          | -+- |     |     | +   |     |     |      | +        |     |     | -+- |     |     | +   | 1860 |
| b |      | Y   | K   | С   | K   | v   | S        | N   | K   | A   | L   | P   | A   | P    | I        | E   | K   | T   | I   | s   | K   | -    |
|   | 1861 | AGC |     |     |     |     |          |     |     |     |     |     |     |      |          |     |     |     |     |     |     | 1920 |
| b |      | A   | K   | G   | Q   | P   | R        | E   | P   | Q   | v   | Y   | T   | L    | P        | P   | s   | R   | E   | E   | M   | -    |
|   |      | GAC |     |     |     |     |          |     |     |     |     |     |     |      |          |     |     |     |     |     |     |      |
| _ | 1921 |     |     |     |     |     |          |     |     |     |     |     |     |      |          |     |     |     |     |     |     | 1980 |
| b |      | _   |     |     | _   |     | -        |     | T   | _   |     |     |     |      |          |     |     |     |     |     |     | -    |
|   | 1981 | CGT |     |     |     |     |          |     |     |     |     |     |     |      |          |     |     |     |     |     |     | 2040 |
| þ |      | v   | E   | W   | E   | s   | N        | G   | Q   | ₽   | E   | N   | N   | Y    | K        | T   | T   | P   | P   | v   | L   | -    |
|   | 2041 |     |     |     |     |     |          |     |     |     |     |     |     |      |          |     | _   |     |     |     | GCA | 2100 |
| b | 2041 |     |     |     |     |     |          |     |     |     |     |     |     |      |          |     |     |     |     |     | Q.  |      |
| _ |      | GCA | GGG | GAA | CGT | CTT | CTC      | ATG | CTC | CGT | GAT | GCA | TGA | .GGC | TCI      | GCA | CAA | CCA | CTA | CAC | GCA |      |
|   | 2101 |     |     |     | +   |     | <b>-</b> | -+- |     |     | +   |     |     |      | +        |     |     | -4- |     |     | +   | 2160 |
| ь |      | Q   | G   | N   | v   | F   | S        | C   | S   | V   | M   | H   | E   | A    | L        | H   | N   | H   | Y   | T   | Q   | -    |
|   | 2161 |     |     |     |     |     |          |     |     |     |     |     |     |      |          |     |     |     |     |     | TAC | 2220 |
| h |      | v   |     | т.  | c   | τ.  | c        | D   | G   | v   | *   | _   |     |      |          |     |     |     |     |     |     |      |

14 of 34

# FIG. 20, pCDNcIL13newFC (SEQ ID NO. 26)

|   |      |      |      |      |       |              |     |      |      |     |      |      | 1    | Kpn: | r        |      |      |      |      |      |          |      |
|---|------|------|------|------|-------|--------------|-----|------|------|-----|------|------|------|------|----------|------|------|------|------|------|----------|------|
|   |      | AAC  |      |      |       |              |     |      |      |     |      |      |      |      |          |      |      |      |      |      |          |      |
|   | 961  |      |      |      | +     |              |     | -+-  |      |     | +    |      |      |      | +        |      |      | -+-  |      |      | +        | 1020 |
| b |      |      |      |      |       |              |     |      |      |     |      |      |      |      |          |      | M    | Ą    | L    | _W   | <u>v</u> | -    |
|   |      | GAC  | rgc/ | AGT  | CCT   | GGC          | TCT | TGC' | TTG  | CCT | TGG' | rgg: | rct( | CGC  | CGC      | ccci | ATT' | raa: | FAA: | rrt: | TAC      |      |
|   | 1021 |      |      |      | +     |              |     | -+-  |      |     | +    |      |      |      | +        |      |      | -+-  |      |      | +        | 1080 |
| b |      | T    | A    | v    | Ļ     | A            | L   | A    | С    | L   | G    | G    | L    | A    | <u>A</u> | P    | F    | N    | N    | F    | T        | -    |
|   |      | CGT  |      |      |       |              |     |      |      |     |      |      |      |      |          |      |      |      |      |      |          |      |
|   | 1081 |      |      |      | +     |              |     | -+-  |      |     | +    |      |      |      | +        |      |      | -+-  |      |      | +        | 1140 |
| b |      | v    | s    | F    | W     | P            | R   | v    | P    | K   | v    | s    | A    | s    | H        | L    | E    | G    | P    | V    | P        | -    |
|   |      | ACG' |      |      |       |              |     |      |      |     |      |      |      |      |          |      |      |      |      |      | _        |      |
|   | 1141 |      |      |      | +     |              |     | -+-  |      |     | +    |      |      |      | +        |      |      | -+-  |      |      | +        | 1200 |
| b |      | R    | s    | V    | S     | L            | P   | V    | T    | L   | K    | E    | L    | I    | E        | E    | L    | T    | N    | I    | T        | -    |
|   | 1201 | ACA  |      |      |       |              |     |      |      |     |      |      |      |      |          |      |      |      |      |      |          | 1260 |
|   | 1201 |      |      |      |       |              |     |      |      |     |      |      |      |      |          |      |      |      |      |      | -        |      |
| b |      | Q    | D    | Q    | T     | P            | L   | С    | N    | G   | s    | M    | v    | W    | s        | v    | D    | L    | A    | A    | G        | -    |
|   | 1261 | CGG  |      |      |       |              |     |      |      |     |      |      |      |      |          |      |      | -    |      |      |          | 1320 |
|   | 1201 |      |      |      |       |              |     |      |      |     |      |      |      |      |          |      |      |      |      |      |          |      |
| b |      | G    | F    | C    | ٧     | A            | ь   | ט    | S    | יו  | т    | N    | T    | S    | N        | C    | N    | A    | I    | F    | R        | -    |
|   | 1321 | TAC  |      |      |       |              |     |      |      |     |      |      |      |      |          |      |      |      |      |      |          | 1380 |
| b |      | TT.  | ^    | Ð    | т     | т.           | tr  | 7.   | т.   | c   | N    | R    | v    | 70   | ъ        | т    | T    | 7.7  | e    | e    | L        | _    |
| 2 |      |      | ~    |      |       |              |     |      |      |     |      |      |      |      |          |      |      |      |      |      |          |      |
|   | 1381 |      |      |      |       |              |     |      |      |     |      |      |      |      |          |      | -    |      |      |      | GAA<br>+ | 1440 |
| b |      | P    | D    | т    | к     | ı            | E   | v    | А    | н   | F    | I    | T    | к    | ь        | L    | т    | Y    | т    | ĸ    | N        | _    |
|   |      |      |      | _    |       | _            |     |      |      |     |      |      |      |      |          |      |      | _    | -    |      |          |      |
|   |      |      |      |      |       |              |     |      |      |     |      |      |      |      |          | Bami | -1   |      |      |      |          |      |
|   | 1441 |      |      |      |       |              |     |      |      |     |      |      |      |      | _        |      |      |      |      |      | CAA<br>+ | 1500 |
| b |      | Ţ,   | F    | R    | R     | G            | p   | F    | τ.   | Е   | v    | т,   | F    | 0    | G        | Ð    | æ    | s    | E    | Þ    | ĸ        | _    |
| _ |      |      |      |      |       |              |     |      |      |     |      |      |      |      |          |      |      |      |      |      |          |      |
|   | 1501 | ATC  |      |      |       | -            |     |      |      |     |      |      |      | – –  |          |      |      |      |      |      | _        | 1560 |
| b |      | s    | A    | D    | K     | т            | Н   | T    | C    | P   | P    | C    | P    | A    | P        | E    | L    | L    | G    | G    | P        | _    |
|   |      | cmc  |      | COTO | CO CO | <b>C</b> mar |     |      | מממי |     |      |      |      |      |          |      |      |      |      |      | TGA      |      |
|   | 1561 |      |      |      |       |              |     |      |      |     |      |      |      |      |          |      |      |      |      |      |          | 1620 |
| b |      | s    | v    | F    | L     | F            | P   | P    | ĸ    | P   | K    | D    | T    | L    | М        | I    | s    | R    | T    | P    | E        | _    |
|   |      | GGT  | CAC  | ATG  | CGT   | GGT          | GGT | GGA  | .CGT | GAG | CCA  | CGA  | AGA  | CCC  | TGA      | GGT  | CAA  | GTT  | CAA  | CTG  | GTA      |      |
|   | 1621 |      |      |      |       |              |     |      |      |     |      |      |      |      |          |      | -    |      |      |      |          | 1680 |
| ь |      | v    | T    | C    | v     | v            | v   | D    | v    | s   | H    | E    | D    | P    | E        | v    | к    | F    | N    | W    | Y        | -    |

|   | 1681 | CGT |   |    |   |    |   |   |   |   |   |   |   |   |   |   |   |   |   |   | CAG<br>+ | 1740 |
|---|------|-----|---|----|---|----|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----------|------|
| b |      | v   | D | G  | v | E  | v | H | N | A | K | T | K | P | R | E | E | Q | Y | N | s        | -    |
|   | 1741 |     |   |    |   |    |   |   |   |   |   |   |   |   |   |   |   |   |   |   | GGA      | 1800 |
| b |      | T   | Y | R  | v | v  | s | v | L | T | v | L | H | Q | D | W | L | N | G | K | E        | -    |
|   | 1801 | GTA |   |    |   |    |   |   |   |   |   |   |   |   |   |   |   |   |   |   |          | 1860 |
| b |      | Y   | K | C  | K | v  | s | N | K | A | L | P | A | P | ı | E | K | T | I | s | ĸ        | -    |
|   | 1861 | AGC |   |    |   |    |   |   |   |   |   |   |   |   |   |   |   |   |   |   |          | 1920 |
| b |      | A   | K | G  | Q | P  | R | E | P | Q | v | Y | r | L | P | P | s | R | E | E | M        | -    |
|   | 1921 | GAC |   |    |   |    |   |   |   |   |   |   |   |   |   |   |   |   |   |   |          | 1980 |
| b |      | T   | ĸ | N  | Q | v  | s | L | T | C | L | v | K | G | F | Y | P | s | D | I | A        | -    |
|   | 1981 | CGT |   |    |   |    |   |   |   |   |   |   |   |   |   |   |   |   |   |   |          | 2040 |
| р |      | v   | E | W  | E | s  | N | G | Q | P | E | N | N | Y | K | T | T | P | P | v | L        | -    |
|   | 2041 | GGA |   |    |   |    |   |   |   |   |   |   |   |   |   |   |   |   |   |   |          | 2100 |
| b |      | D   | s | D  | G | s  | F | F | L | Y | s | K | L | T | v | D | ĸ | s | R | W | Q        | -    |
|   | 2101 | GCA |   |    |   |    |   |   |   |   |   |   |   |   |   |   |   |   |   |   |          | 2160 |
| b |      | Q   | G | N  | v | F  | s | С | s | v | M | Н | E | A | L | H | N | H | Y | T | Q        | _    |
|   | 2161 | GAA |   |    |   |    |   |   |   |   |   |   |   |   |   |   |   |   |   |   |          | 2220 |
| b |      | к   | s | L. | S | τ, | s | p | G | ĸ | * |   |   |   |   |   |   |   |   |   |          |      |

# FIG. 21, pCDNIL13oldFC (SEQ ID NO. 29)

|   |      |          |      |      |      |      |     |   |   |   |   |   | 1 | Kpn<br>I | Ι   |           |          |   |    |   |            |      |
|---|------|----------|------|------|------|------|-----|---|---|---|---|---|---|----------|-----|-----------|----------|---|----|---|------------|------|
|   |      | AAC      |      |      |      |      |     |   |   |   |   |   |   |          |     |           |          |   |    |   |            | 1020 |
| b |      |          |      |      |      |      |     |   |   |   |   |   |   |          |     |           | <u>M</u> | Α | L_ | W | <u>v</u> . | -    |
|   | 1021 | GAC      | rgcz | AGTO | CCT( | GGC' | TCT |   |   |   |   |   |   |          |     |           |          |   |    |   |            | 1080 |
| b |      | <u>T</u> | A    | v    | L    | A    | L   | A | С | L | G | G | L | <u>A</u> | A   | <u>_P</u> | G        | P | V  | P | R          | -    |
|   | 1081 | TTC      |      |      |      |      |     |   |   |   |   |   |   |          |     |           |          |   |    |   |            | 1140 |
| b |      | s        | v    | s    | L    | P    | L   | T | L | R | E | L | I | E        | E   | L         | v        | N | I  | T | Q          | -    |
|   | 1141 | AGA      |      |      |      |      |     |   |   |   |   |   |   |          |     |           |          |   |    |   |            | 1200 |
| b |      | D        | Q    | T    | P    | ь    | С   | N | G | s | M | v | W | s        | v   | D         | L        | A | A  | G | G          | -    |
|   | 1201 | GTA      |      |      |      |      |     |   |   |   |   |   |   |          |     |           |          |   |    |   |            | 1260 |
| b |      | Y        | C    | A    | A    | L    | E   | s | L | T | N | 1 | s | N        | С   | N         | A        | I | E  | ĸ | T          | -    |
|   | 1261 | CCA      |      |      |      |      |     |   |   |   |   |   |   |          |     |           |          |   |    |   |            | 1320 |
| b |      | Q        | R    | M    | L    | G    | G   | L | C | N | R | ĸ | A | P        | T   | T         | v        | s | s  | ь | P          | -    |
|   | 1321 | CGA      |      |      |      |      |     |   |   |   |   |   |   |          |     |           |          |   |    |   |            | 1380 |
| b |      | D        | T    | ĸ    | I    | E    | v   | A | Q | F | v | к | D | L        | L   | s         | Y        | T | ĸ  | Q | L          | -    |
|   |      |          |      |      |      |      |     |   |   |   |   |   |   |          | Bam | HI<br>    |          |   |    |   |            |      |
|   | 1381 | GTT      |      |      |      |      |     |   |   |   |   |   |   |          |     |           |          |   |    |   |            | 1440 |
| b |      | F        |      | н    |      |      |     |   |   |   |   |   |   |          |     | _         | S        |   | P  |   |            | -    |
|   | 1441 |          |      |      |      |      |     |   |   |   |   |   |   |          |     |           | CCT      |   |    |   |            | 1500 |
| b |      | A        |      | K    | _    |      |     |   |   |   |   |   |   | _        | _   | _         | L        | - | G  | P | s          | -    |
|   | 1501 |          |      |      |      |      |     |   |   |   |   |   |   |          |     |           | CCG      |   |    |   |            | 1560 |
| b |      |          | F    |      |      |      |     | K |   |   |   | T |   |          |     | S         |          | T | _  |   | v          | -    |
|   | 1561 |          |      |      |      |      |     |   |   |   |   |   |   |          |     |           |          |   |    |   | CGT<br>+   | 1620 |
| b |      |          |      |      |      |      |     |   |   |   |   |   |   |          |     |           |          |   |    |   | v<br>      | -    |
|   | 1621 |          |      |      |      |      |     |   |   |   |   |   |   |          |     |           |          |   |    |   | CAC        | 1680 |
| b |      | D        | G    | v    | E    | v    | H   | N | A | K | T | K | p | R        | E   | E         | 0        | Y | N  | S | T          | _    |

18/34

|   |      | GTA | CCG   | TGT  | GGT | CAG    | CGT  | CCT  | CAC | CGT | CCi |      |      |     | CTG  | GCT                 | GAA | TGG  | CAA    | GGA | GTA  |      |
|---|------|-----|---|------|-----|--------|------|------|-----|-----|-----|------|------|-----|------|---------------------|-----|------|--------|-----|------|------|
|   | 1681 |     |   |      | +   |        |      | -+-  |     |     |     |      |      |     | +    |                     |     | -+-  |        |     | +    | 1740 |
| _ |      |     | _   |      |     | _      |      | _    | _   |     | _   |      | _    | _   |      | _                   |     | _    |        |     |      |      |
| Þ |      | Y   | R   | V    | v   | S      | V    | L    | T   | V   | L   | H    | Q    | D   | W    | L                   | N   | G    | K      | E   | Y    | -    |
|   |      | CAA | GTG.  | ממח  | CCT | כיזיכי | ממיז | ממח  | AGC | רכת | CCC | אככ  | רככ  | СЪТ | CGA  | GAD                 | AAC | СВТ  | כיזיכי | ראא | AGC  |      |
|   | 1741 |     |   |      |     |        |      |      |     |     |     |      |      |     |      |                     |     |      |        |     |      | 1800 |
|   |      |     |   |      |     |        |      |      |     |     |     |      |      |     |      |                     |     |      |        |     |      |      |
| b |      | K   | C   | K    | v   | S      | N    | K    | A   | L   | P   | A    | P    | I   | E    | K                   | T   | I    | S      | K   | A    | -    |
|   |      |     |   |      |     |        |      |      |     |     |     | ~~ ~ |      |     |      |                     |     |      |        | ~~  | ~~ ~ |      |
|   | 1001 |     |   |      |     |        |      |      |     |     |     |      |      |     |      |                     |     |      | 1860   |     |      |      |
|   | 1001 |     | K G Q P R E P Q V Y T L P P S R E E M T  CAAGAACCAGGTCAGCCTGACCTGCCTGGTCAAAGGCTTCTATCCCAGCGACATCGCCGT |      |     |        |      |      |     |     |     |      |      |     |      |                     |     |      | 1000   |     |      |      |
| b |      | K   | G   | Q    | P   | R      | E    | P    | Q   | v   | Y   | T    | L    | P   | P    | S                   | R   | E    | E      | M   | T    | _    |
|   |      |     |   |      |     |        |      |      |     |     |     |      |      |     |      |                     |     |      |        |     |      |      |
|   |      |     | -<br>CAAGAACCAGGTCAGCCTGACCTGGCCTGGTCAAAGGCTTCTATCCCAGCGACATCGCCGT                                    |      |     |        |      |      |     |     |     |      |      |     |      |                     |     |      |        |     |      |      |
|   | 1861 |     | CAAGAACCAGGTCAGCCTGACCTGCCTGGTCAAAGGCTTCTATCCCAGCGACATCGCCGT  |      |     |        |      |      |     |     |     |      |      |     |      |                     |     | 1920 |        |     |      |      |
| ь |      | ĸ   | N   | 0    | v   | s      | r.   | T    | C   | т.  | v   | ĸ    | G    | F   | Y    | P                   | S   | מ    | T      | А   | v    | _    |
| ~ |      | •   | ••  | ×    | •   | _      | _    | -    | _   | ~   | •   |      | _    | -   | _    | -                   | _   | _    | _      |     | _    |      |
|   |      |     |   |      |     |        |      |      |     |     |     |      |      |     |      |                     |     |      |        |     |      |      |
|   | 1921 |     |   |      | +   |        |      | -+-  |     |     | +   |      |      |     | +    |                     |     | -+-  |        |     | +    | 1980 |
| b |      | E.  | D.7   | 127  | c   | 7.7    | G    | 0    | Ð   | F.  | λŢ  | N    | v    | ĸ   | T    | $\boldsymbol{\tau}$ | D   | D    | 17     | т.  | D    | _    |
| D |      | ь   | **  | В    |     | **     | G    | ¥    | _   | 23  | 14  | 14   | •    | 1   | •    | •                   | •   | -    | ٠      |     | _    |      |
|   |      | CTC | CGA   | .CGG | CTC | CTT    | CTT  | CCT  | CTA | TAG | CAA | GCI  | 'CAC | CG1 | 'GGA | CAA                 | GAG | CAG  | GTG    | GCA | GCA  |      |
|   | 1981 |     |   |      | +   |        |      | -+-  |     |     | +   |      |      |     | +    |                     |     | -+-  |        |     | +    | 2040 |
|   |      | ~   | D   | G    | S   | r.     | -    |      | Y   | _   | 7.5 | -    | m    | **  | _    | T.P                 |     | ъ    | D.7    | 0   | _    |      |
| ь |      | S   | D   | G    | 5   | F      | F    |      | I   | 3   | Λ.  |      | 1    | V   | D    |                     | ٦   | K    | W      | Q   | Q    | _    |
|   |      | GGG | GAA   | CGT  | CTI | CTC    | ATG  | CTC  | CGT | GAT | GCA | TGA  | GGC  | TCT | GCA  | CAA                 | CCA | CTA  | CAC    | GCA | GAA  |      |
|   | 2041 |     |   |      | +   |        |      | -+-  |     |     | +   |      |      |     | +    |                     |     | -+-  |        |     | +    | 2100 |
|   |      | _   |   |      | _   | _      |      |      |     |     |     | _    | _    | _   |      |                     |     |      | _      | _   |      |      |
| ь |      | G   | N   | v    | F   | S      | C    | S    | V   | M   | H   | E    | A    | L   | Н    | N                   | н   | Y    | 1      | Q   | K    | -    |
|   |      | GAG | CCT   | CTC  | CCT | GTC    | TCC  | :GGG | TAA | ATG | AGT | GTA  | GAT  | CCG | TTA  | ACC                 | GTI | 'ACC | 'AAC   | TAC | CTA  |      |
|   | 2101 |     |   |      |     |        |      |      |     |     |     |      |      |     |      |                     | -   |      |        |     |      | 2160 |
|   |      |     |   |      |     |        |      |      |     |     |     |      |      |     |      |                     |     |      |        |     |      |      |
| b |      | S   | L   | S    | L   | S      | P    | G    | K   | *   |     |      |      |     |      |                     |     |      |        |     |      | -    |

Figure 22,

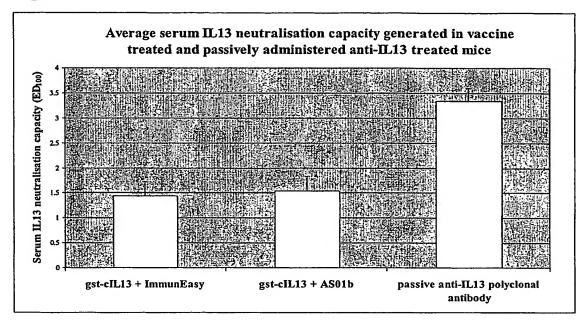


Figure 23,

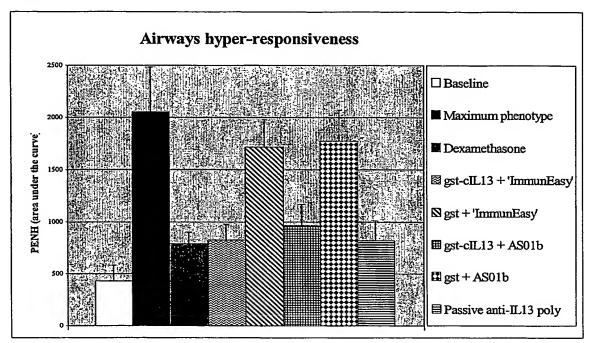


Figure 24,

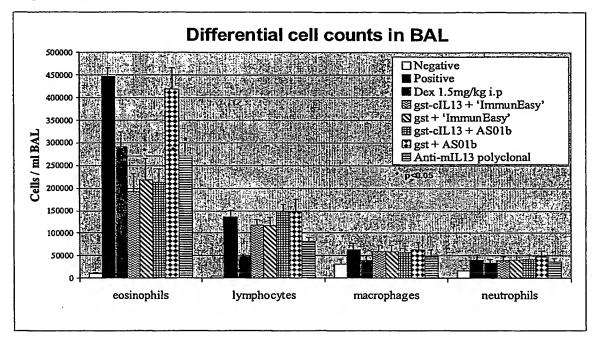


Figure 25,

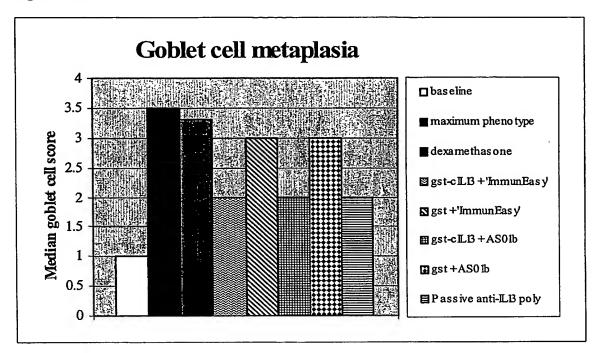


Figure 26A, gst-cIL13 + 'ImmunEasy'

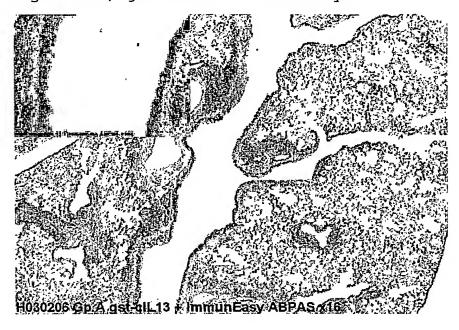


Figure 26B, gst + 'ImmunEasy'

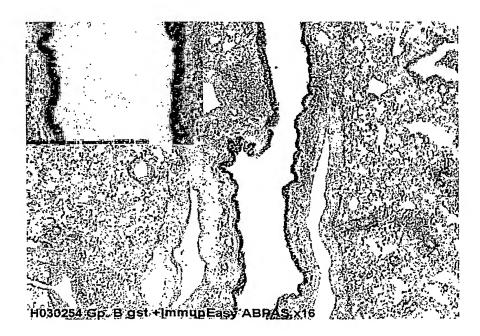
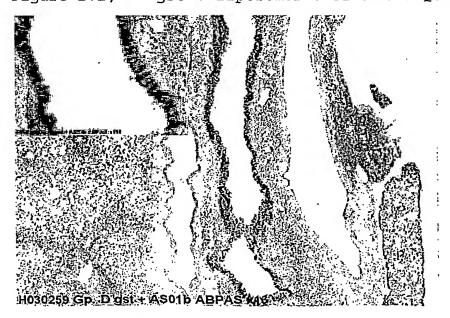


Figure 27A, gst-cIL13 + liposomes + 3D-MPL + QS21



Figure 27B, gst + liposomes + 3D-MPL + QS21



PCT/GB2003/003703

Figure 28, Dexamethasone

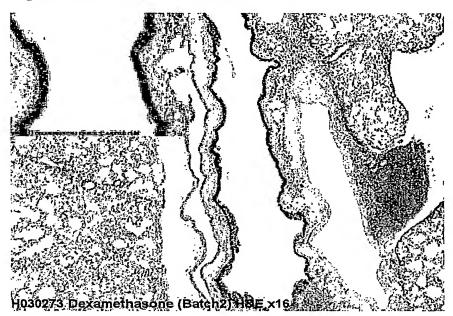


Figure 29, Maximal asthmatic phenotype

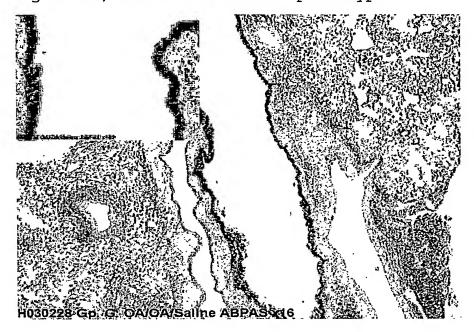


Figure 30,

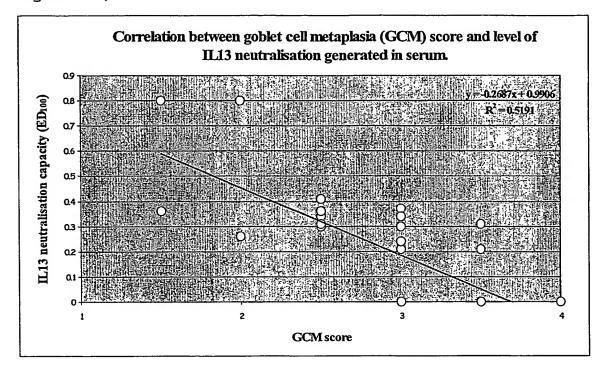


Figure 31

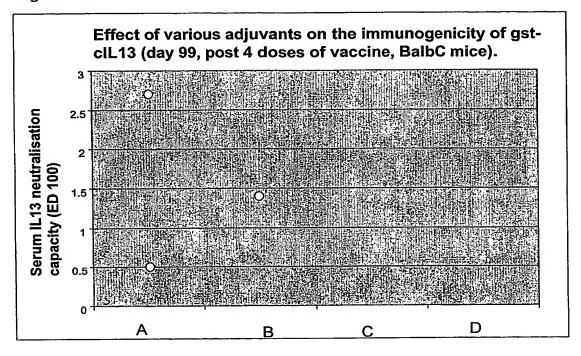
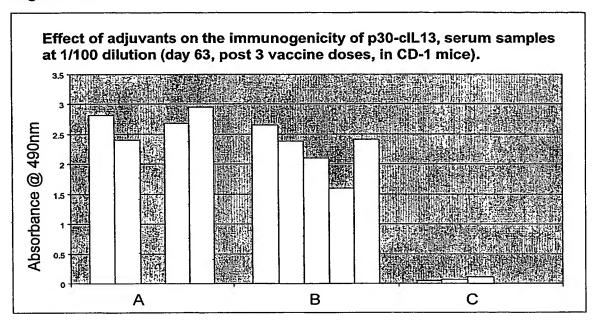


Figure 32,



30/34

Figure 33,

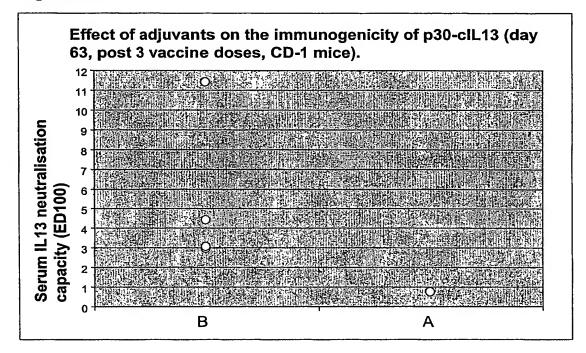


Figure 34,

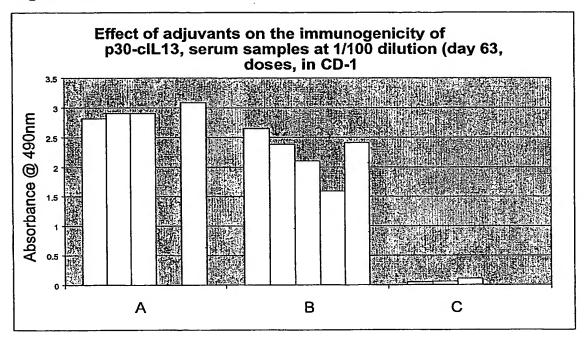


Figure34,

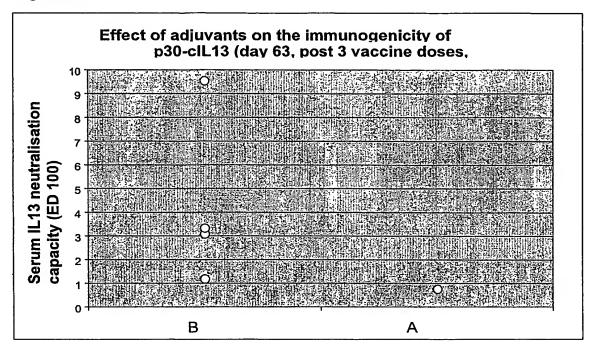


Figure 36,

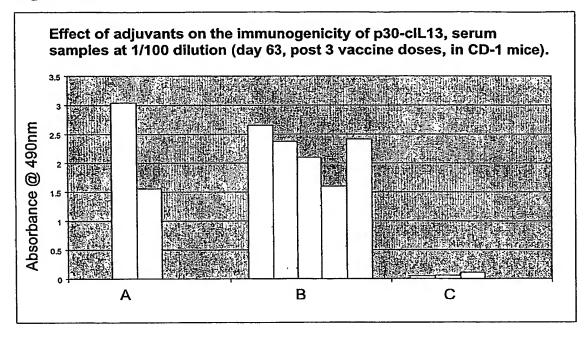


Figure 37,

